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GRADING FOR GROUNDNUT KERNELS FOR OIL MILLING AND FOR TABLE USE

(Incorporating Amendment Nos. 1 & 2)

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Indian Standard

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(*Continued on page* 9)

Indian Standard

GRADING FOR GROUNDNUT KERNELS FOR OIL MILLING AND FOR TABLE USE

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 21 October 1967, after the draft finalized by the Oils and Oilseeds Sectional Committee had been approved by the Chemical Division Council and the Agricultural and Food Products Division Council.

0.2 Groundnut kernels, commonly known as *MUNGPHALI*, are obtained from the plant *Arachis hypogaea* Linn. The 'bunch' or 'erect', and the 'runner' or 'spreading' are the two varieties of groundnuts commonly cultivated. The former is generally of short duration and matures in 3 to 4 months. The branches grow erect and the pods appear in a cluster confined to the base of the plant. The pods are generally small or medium sized and contain 1 to 2 small round seeds within a thin shell. The spreading variety takes 4 to 6 months to ripen and the pods are borne along the length of the branches. These are medium-sized and contain 1 to 3 oval seeds in a comparatively thicker shell. There is another variety called semi-spreading which is an intermediate between the bunch and the spreading varieties.

0.3 Formulation of this standard has been taken up to meet the need felt for precise and acceptable methods for grading of oilseeds produced and marketed in the country. This standard is based on the trade practices followed in the country in respect of the types and grades. The 'milling' grade is intended for the production of oil, while the hand picked selected (*HPS*) grade with testa, is for table use for direct edible consumption. The specifications for oil obtained from these seeds are covered in IS : 54-1968*.

0.4 This edition 1.2 incorporates Amendment No. 1 (February 1971) and Amendment No. 2 (December 1978). *JAWA* variety of groundnut kernel for table use which now constitutes a sizable portion of the export variety of groundnut kernels is being included in the standard through Amendment No. 2. Side bar indicates modification of the text as the result of incorporation of the amendments.

0.5 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960†. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

---

*Specification for groundnut oil (*second revision*) (*under preparation*).

†Rules for rounding off numerical values (*revised*).

1. SCOPE

1.1 This standard prescribes the methods of grading and the requirements for groundnut kernels for oil milling and for table use, along with the relevant methods of sampling and test.

2. TERMINOLOGY

2.1 For the purpose of this standard the definitions given in IS : 3579-1966* shall apply.

3. TYPES

3.1 Groundnut grown in India shall be grouped under the following four main commercial types, though they may be marketed under a number of trade names.

3.1.1 *Bold* — The pods are larger than those of the Coromandel (*see* **3.1.3**) and the constriction is well defined. The shell is thicker than that of Coromandel. The kernels are oval, larger than those of Coromandel and covered with light red-coloured skin which darkens quickly (*see* Fig. 1).

3.1.2 *Khandesh* — The pods are smaller than those of Coromandel and bold and have a well-pronounced constriction in the middle. The shell is thin and the kernels are small and round and are covered with light rose skin which peels off easily and darkens with age. The groundnut seeds traded under the name Khandesh in Gujarat and Maharashtra are somewhat bigger in size than those grown in Madras, where it is known commercially as peanuts. Khandesh type is also known as Spanish peanut or Natal (*see* Fig. 2).

3.1.2.1 Another variation of the Khandesh type is the Kanpur variety.

3.1.3 *Coromandel* — The pods are smaller than those of the Bold (*see* **3.1.1**) and have an ill-defined constriction in the middle. The shell is thinner than that of the Bold. The kernels are small in size, oval in shape and are covered with light red skin, the colour of which darkens with age (*see* Fig. 3).

3.1.4 *Red Natal* — The pods have constrictionless pronounced than Khandesh. The kernels are round and have deep dark red-coloured skin (*see* Fig. 4). This type is cultivated in areas of Maharashtra, Madhya Pradesh and the Pollachi tract in Madras State.

4. GRADES

4.1 Groundnut Kernels for oil milling and for table use shall be graded as follows depending on the requirement prescribed in **5.1**:

a) *For Oil Milling* (*see* **0.3**)

Milling 1,
Milling 2, and
Milling 3
} For each of the four types described under **3**.

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*Methods of test for oilseeds.

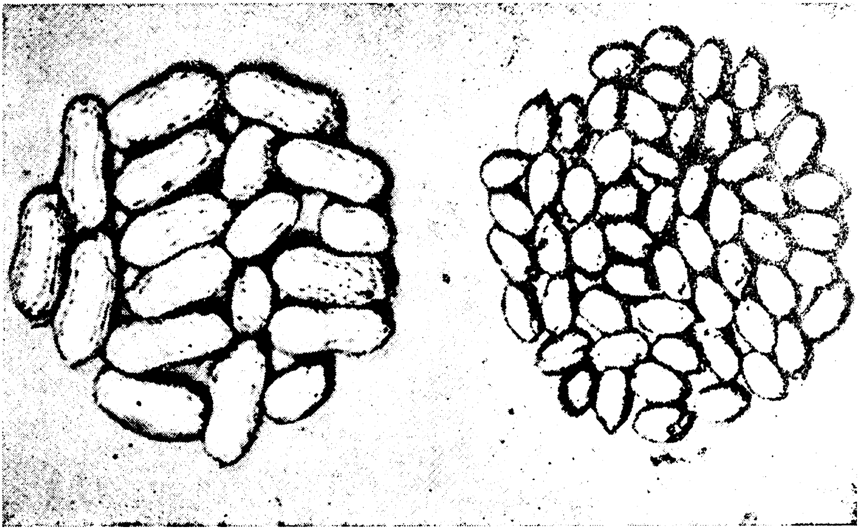

FIG. 1 PODS AND KERNELS OF BOLD GROUNDNUT

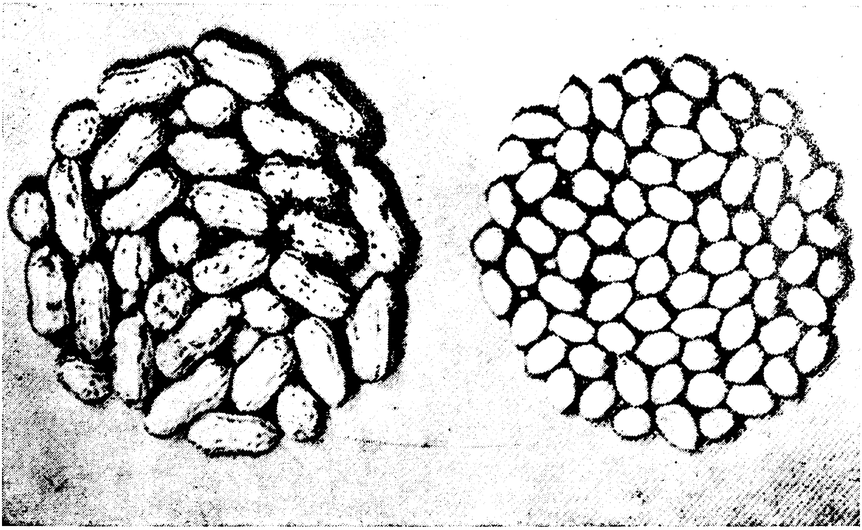

FIG. 2 PODS AND KERNELS OF KHANDESH

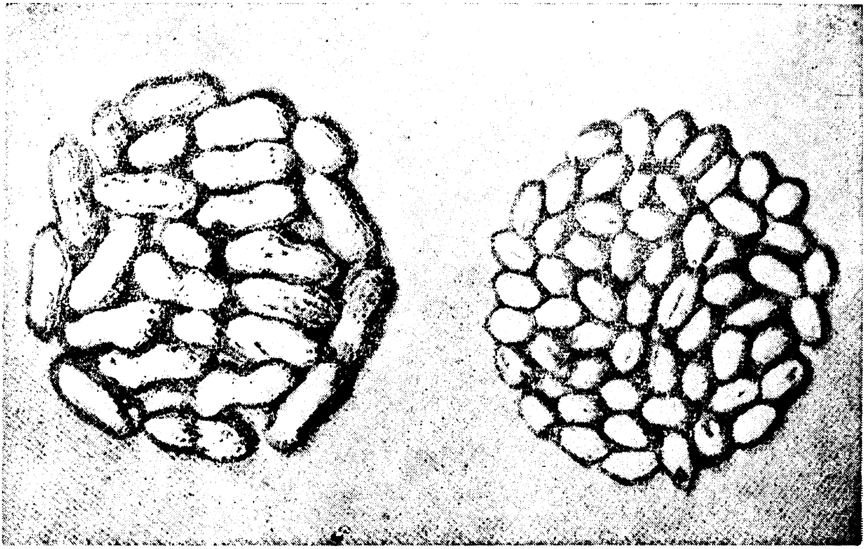

FIG. 3 PODS AND KERNELS OF COROMANDEL

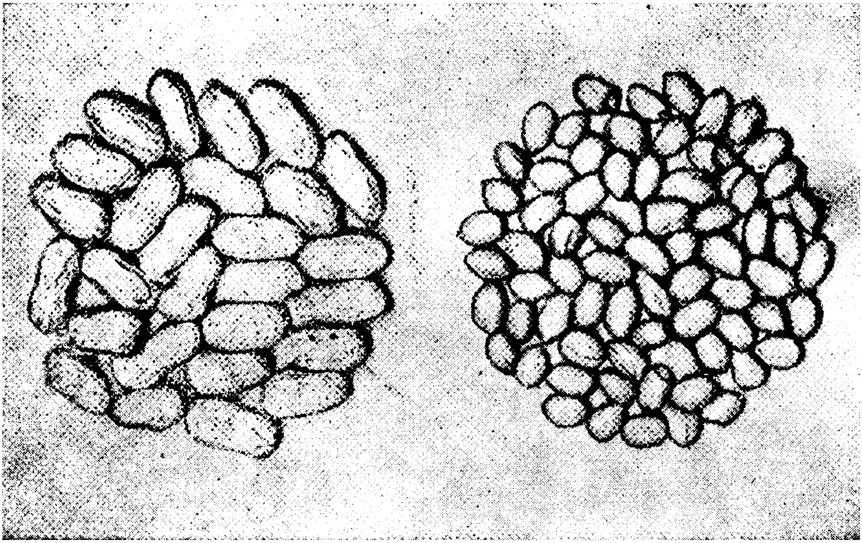

FIG. 4 PODS AND KERNELS OF RED NATAL

b) *For Table Use* (*see* **0.3**)

HPS Bold 1, *HPS* Bold 2, *HPS* Bold 3, *HPS* Khandesh 1, *HPS* Khandesh 2, *JAWA* Superior and *JAWA* ordinary

5. REQUIREMENTS

5.1 The groundnut kernels of the four types shall be graded in accordance with the physical and chemical requirements given in Tables 1 and 2.

TABLE 1 REQUIREMENTS FOR GROUNDNUT KERNELS FOR OIL MILLING

SL No.	CHARACTERISTIC	REQUIREMENTS FOR GRADE			METHOD OF TEST (REF TO CL NO. IN IS : 3579-1966*)
		Milling 1	Milling 2	Milling 3	
(1)	(2)	(3)	(4)	(5)	(6)
i)	Damaged kernels and weevilled kernels, percent by weight, *Max*	0.5	1.5	3.0	4
ii)	Slightly damaged kernels, percent by weight, *Max*	1.0	2.0	4.0	
iii)	Shrivelled and immature kernels, percent by weight, *Max*	1.0	3.0	6.0	
iv)	Split and broken kernels, percent by weight, *Max*	5.0	10.0	15.0	
v)	Nooks, percent by weight, *Max*	1.0	2.0	3.0	
vi)	Impurities, percent by weight, *Max*	1.0	2.0	3.0	
vii)	Admixture with other types, percent by weight, *Max*	1.0	2.0	5.0	
viii)	Total of i) to vii) above, *Max*	6.0	12.0	20.0	
ix)	Moisture content, percent by weight, *Max*	6	6	6	5.1
x)	Oil content (on moisture free basis), percent by weight, *Min*	48	46	42	5.2
xi)	Acid value of extracted oil, *Max*	2	4	6	5.3

*Methods of test for oilseeds.

TABLE 2 REQUIREMENTS FOR GROUNDNUT KERNELS FOR TABLE USE

(*Clause* 5.1)

SL No.	CHARACTERISTIC	REQUIREMENT FOR GRADE							METHODS OF TEST, REF TO	
		HPS Bold 1	*HPS* Bold 2	*HPS* Bold 3	*HPS* Khandesh 1	*HPS* Khandesh 2	*JAWA* Superior	*JAWA* Ordinary	Appendix	Cl in IS : 3579-1966*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
i)	Number of kernels per 25 g of the material	44, *Max*	45 to 53	54 to 58	70, *Max*	71 to 75	50 to 60	65 to 70	A	—
ii)	Broken damaged and slightly damaged kernels, percent by mass, *Max*	Nil	1	1	Nil	1	Nil	1	—	4

*Methods of test for oilseeds.

5.2 The groundnut kernels shall also be free from non-edible oil seeds, such as *MAHUA*, castor, *NEEM* and argemone.

6. PACKING

6.1 Hand picked selected groundnut kernels shall be supplied in new B-T will jute bags and other in clean, dry sound single new or unmended B-Twill bags in merchantable condition as agreed to between the purchaser and the supplier.

7. MARKING

7.1 The bags shall be marked with the name, type and grade of the oilseed, weight of the material, the year of crop and the source of supply.

8. SAMPLING

8.1 Representative samples for the purpose of these tests shall be drawn in accordance with IS : 4115-1967*.

9. TESTS

9.1 Tests shall be carried out as prescribed in IS : 3579-1966†.

9.2 Quality of Reagents — Unless specified otherwise, pure chemicals and distilled water (*see* IS : 1070-1960‡) shall be used in the tests.

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*Methods of sampling of oilseeds.

†Methods of test for oilseeds.

‡Specification for water, distilled quality (*revised*).

NOTE — 'Pure chemicals' shall mean chemicals that do not contain impurities which affect the results of analysis.

APPENDIX A

[*Table* 2, *Sl No.* (i)]

DETERMINATION OF NUMBER OF KERNELS IN 25 G OF THE MATERIAL

A-1. PROCEDURE

A-1.1 Weigh accurately about 25 g of the material and count the number of kernels in it.

A-2. CALCULATION

A-2.1 Calculate the number of kernels per 25 g of the material as follows:

$$\text{Number of kernels per 25 g of the material} = \frac{25\ N}{W}$$

where

N = number of kernels in W g of the material, and
W = weight, in g, of the material taken.

A-3. REPORTING

A-3.1 Report the result to the nearest whole number as the number of kernels per 25 g of the material.

(*Continued from page* 2)

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